CLAIMS:

1. A method comprising:

selecting a first parameter configuration for a neurostimulator;

receiving an indication of observed efficacy of the first parameter configuration; and

selecting a second parameter configuration for the neurostimulator based on the indication of observed efficacy and a genetic algorithm.

2. The method of claim 1, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

3. The method of claim 2, wherein each of the electrode configurations defines polarities for electrodes in the combination.

4. The method of claim 2, wherein the electrodes are carried by two or more implanted leads.

5. The method of claim 4, wherein the electrodes are associated with different target regions within a body of a patient.

6. The method of claim 4, wherein the leads are implanted proximate a spine of a patient.

7. The method of claim 2, further comprising iteratively selecting additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm.

8. The method of claim 7, further comprising terminating the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

9. The method of claim 8, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

10. The method of claim 2, further comprising:

iteratively selecting additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm;

terminating the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

programming the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

11. The method of claim 10, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

12. The method of claim 11, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

13. The method of claim 1, wherein selecting the first and second parameter configurations includes suggesting the first and second parameter configurations to a clinician.

14. The method of claim 1, wherein receiving an indication relating to observed efficacy includes receiving user input indicating observed efficacy.

15. The method of claim 1, further comprising updating the genetic algorithm based on the observed efficacy.

16. The method of claim 15, wherein updating the genetic algorithm comprises performing at least one of cross-over between different solutions identified by the genetic algorithm and mutation of one or more solutions identified by the genetic algorithm.

17. The method of claim 16, wherein the genetic algorithm identifies solutions associated with the first and second parameter configurations, and updating the genetic algorithm includes generating one or more successive generations of the solutions.

18. The method of claim 16, wherein cross-over includes swapping electrodes between different solutions.

19. The method of claim 16, wherein mutation includes introducing random electrode changes in different solutions.

20. A computer-readable medium comprising instructions to cause a processor to:
select a first parameter configuration for a neurostimulator;
receive an indication of observed efficacy of the first parameter configuration; and
select a second parameter configuration for the neurostimulator based on the indication of observed efficacy and a genetic algorithm.

21. The computer-readable medium of claim 20, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

22. The computer-readable medium of claim 21, wherein each of the electrode configurations defines polarities for electrodes in the combination.

23. The computer-readable medium of claim 21, wherein the electrodes are carried by two or more implanted leads.

24. The computer-readable medium of claim 23, wherein the electrodes are associated with different target regions within a body of a patient.

25. The computer-readable medium of claim 23, wherein the leads are implanted proximate a spine of a patient.

26. The computer-readable medium of claim 21, further comprising instructions to cause the processor to iteratively select additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm.

27. The computer-readable medium of claim 26, further comprising instructions to cause the processor to terminate the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

28. The computer-readable medium of claim 27, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

29. The computer-readable medium of claim 21, further comprising instructions to cause the processor to:

iteratively select additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm;

terminate the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

program the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

30. The computer-readable medium of claim 29, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

31. The computer-readable medium of claim 30, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

32. The computer-readable medium of claim 20, wherein the instructions cause the processor to suggest the first and second parameter configurations to a clinician.

33. The computer-readable medium of claim 20, wherein the instructions to cause the processor to receive an indication relating to observed efficacy include instructions to cause the processor to receive user input indicating observed efficacy.

34. The computer-readable medium of claim 20, further comprising updating the genetic algorithm based on the observed efficacy.

35. The computer-readable medium of claim 34, wherein updating the genetic algorithm comprises performing at least one of cross-over between different solutions identified by the genetic algorithm and mutation of one or more solutions identified by the genetic algorithm.

36. The computer-readable medium of claim 35, wherein the genetic algorithm identifies solutions associated with the first and second parameter configurations, and updating the genetic algorithm includes generating one or more successive generations of the solutions.

37. The computer-readable medium of claim 35, wherein cross-over includes swapping electrodes between different solutions.

38. The computer-readable medium of claim 35, wherein mutation includes introducing random electrode changes in different solutions.

39. A device comprising a processor programmed to:

select a first parameter configuration for a neurostimulator;

receive an indication of observed efficacy of the first parameter configuration; and

select a second parameter configuration for the neurostimulator based on the indication of observed efficacy and a genetic algorithm.

40. The device of claim 39, wherein the parameter configurations include electrode configurations, each of the electrode configurations defining a combination of two or more electrodes for delivery of neurostimulation energy.

41. The device of claim 40, wherein each of the electrode configurations defines polarities for electrodes in the combination.

42. The device of claim 40, wherein the electrodes are carried by two or more implanted leads.

43. The device of claim 42, wherein the electrodes are associated with different target regions within a body of a patient.

44. The device of claim 42, wherein the leads are implanted proximate a spine of a patient.

45. The device of claim 40, wherein the processor iteratively selects additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm.

46. The device of claim 45, wherein the processor terminates the iterative selection of the additional electrode configurations when one or more termination criteria are satisfied.

47. The device of claim 46, wherein the termination criteria include selection of one of the electrode configurations with an observed efficacy that satisfies a threshold efficacy.

48. The device of claim 40, wherein the processor:

iteratively selects additional electrode configurations for the neurostimulator based on observed efficacy of preceding electrode configurations and the genetic algorithm;

terminates the iterative selection of the additional electrode configurations at a final electrode configuration when one or more termination criteria are satisfied; and

programs the neurostimulator to employ the final electrode configuration in delivery of neurostimulation therapy.

49. The device of claim 48, wherein the neurostimulator is a spinal cord stimulator, and the final electrode configuration includes electrodes deployed on one more implanted spinal leads.

50. The device of claim 49, wherein the final electrode configuration defines a combination of two electrodes from a set of at least eight electrodes.

51. The device of claim 39, wherein the processor generates a suggestion of the first and second parameter configurations to a clinician.

52. The device of claim 39, wherein the processor receives user input indicating observed efficacy.

53. The device of claim 39, wherein the processor updates the genetic algorithm based on the observed efficacy.

54. The device of claim 53, wherein the processor updates the genetic algorithm by performing at least one of cross-over between different solutions identified by the genetic algorithm and mutation of one or more solutions identified by the genetic algorithm.

55. The device of claim 54, wherein the genetic algorithm identifies solutions associated with the first and second parameter configurations, and the processor updates the genetic algorithm by generating one or more successive generations of the solutions.

56. The device of claim 54, wherein cross-over includes swapping electrodes between different solutions.

57. The device of claim 54, wherein mutation includes introducing random electrode changes in different solutions.